

Self-regulated learning of history-taking

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VALORISATION ADDENDUM

This valorization addendum aims to identify opportunities for creating further value from the theoretical and empirical research results presented in this thesis. Results presented in the four studies can serve to guide the educational development of programs for training students' self-monitoring skills. However, given the innovative aspects of our research approach it is recommended to conduct additional independent studies to strengthen the evidence for this guidance.

This thesis expanded an established version of the conversational model of history taking to better model the learning processes related to history taking from a self-regulation perspective. Interpreting history-taking as consisting of three problem-solving tasks results in the newly presented *self-regulation oriented conversational model of history-taking*. In addition, self-regulation required to comprehend and solve each of the three tasks can be modeled in a more detailed fashion using *cue-utilization frameworks*. The subsequent sections sketch ideas for creating value by using these two theoretical models for the practice of teaching and learning medical history-taking.

Learning materials supporting self-regulation while learning history-taking

The history-taking knowledge and skills map

Mapping the diverse sub-skills interacting in constituting good history taking for creating the *self-regulation oriented conversational model of history-taking* made the high complexity of history taking apparent. To perform and practice their history taking effectively students need not only basic 'communication skills' and 'medical knowledge', but also a high level of knowledge about how the medical team interacts in the clinical setting.

Thus, a first product creating value from this result could be a map visualizing the sub-skills and knowledge. Such a map *facilitates students' and supervisors' orientation on what has already been achieved and what still needs to be learned*.

Textbook chapter on self-regulated learning of history-taking during clinical placement

Around the knowledge and skills map, a textbook chapter about how to best continue learning history-taking during clinical placements could be developed. This chapter should accompany common learning materials used in early communication skills training in medical school, and should outline how the diverse knowledge elements and skills needed for history-taking interact, which of these knowledge and skills have already been trained in communication skills training, and what knowledge has to be acquired when entering a clinical placement. Use of the knowledge and skills map that outlines to students where they 'stand' after history-taking training in the classroom, and what they need to learn when entering a new clinical setting, might contribute to establishing a working and learning attitude supporting self-regulation. This entails

students' showing their interest in a clinical department's work routines to identify what they need to learn and what they can learn in a specific department. It also includes students expressing clearly what they feel and what they do not feel ready to do, and it entails students asking for help in order to learn new things in the clinic.

Train-the-trainer material on integrating undergraduate medical-students' skills efficiently in the medical team?

A similar study text, titled *How to efficiently integrate undergraduate medical-students' skills in the medical team?* should be developed accompanying the train-the-trainer materials for clinical supervisors. This is necessary because students' efforts in self-regulation are influenced by their supervisors. When students approach a supervisor in an attempt to find out which specific information (e.g., on current medication) they have to gather when interviewing a patient, it supports and reinforces their self-regulation when their asking for help is well received by the majority of their supervisors. Such a text outlines what supervisors can expect students of this level of education to know and to be able to do, and what information the clinic needs to provide to new students to integrate them efficiently in their medical team. Using the knowledge and skills map to outline for clinical supervisors where their students 'stand' with respect to their history-taking skills, might contribute to establishing the supportive workplace-based learning environment that students need to become and stay engaged in learning.

Learning materials supporting cue-utilisation for history-taking

Facilitating accurate self-judgment with a checklist scaffolding self-monitoring

Within this thesis the *self-regulation oriented conversational model of history-taking* was used to theoretically explore what observable behavior, what information from memory, and what experiential information is available to students as cues when self-monitoring the three learning processes related to history taking. The resulting cue-utilization models indicate that the current practice of using checklists designed for assessing students' history taking performance are not necessarily helpful when students self-monitor their learning. Checklists such as the well-known *Calgary Cambridge guide to the medical interview* by Kurz, Silverman Benson and Draper generally require an observer to rate if specific behavior has been shown by the student, sometimes the appropriateness of the behavior shown has to be rated additionally (e.g., *Student uses empathy to communicate appreciation of the patient's feelings or predicament - good/adequate/not adequate/not done*). When students use such checklists for learning, they simply replace "student" with "I". However, from a learning point of view this practice might not be helpful in informing their learning, as it requires them to be able to look what is behind *using empathy adequately*, which is hard to recognize. A new learning-oriented checklist inspired by the cue-utilization framework might provide more specified scaffolds to facilitate accurate self-monitoring by steering student's attention towards cues relevant for accurate self-

judgment. The basic design principle for compiling a learning-oriented checklist is to guide students to relevant cues that provide a basis for more accurate self-judgments.

A prompt such as *Identify a scene during your last encounter where your patient expressed feelings or predicament and describe it using keywords* draws students' attention towards observable patient behavior and towards their own interpretation of how their patient might have felt in the situation. The cognitions related to providing the required keywords then provide the basis for self-judging their performance accurately by answering a question such as: *How do you rate your own reaction following the patient's expression of feelings or predicament? (good/adequate/not adequate/not done).*

Facilitating accurate external-judgments with a checklist scaffolding monitoring

Consequently, the newly developed cue-utilization frameworks can also be used to facilitate accurate external judgments. Using the established checklists for self-assessment as described above also requires supervisors to be able to look at what is behind items such as '*using empathy adequately*' to be able to judge accurately. Thus, also supervisors' accuracy in rating students' performance may be improved with a scaffolded checklist. A prompt such as *Mark each scene where the patient expressed feelings or predicament. Write one illustrative keyword and judge adequacy of student's response* might result in a written observation protocol such as **: puzzled (-); *: ?? (-); *: offended (+/-)*. The resulting overall judgment 'not adequate' for the item *Student uses empathy to communicate appreciation of the patient's feelings or predicament* is thus well informed and reproducible.

Use subjective experiential information to give feedback - rethinking the role of personality adjectives

Within this thesis the *cue-utilization framework* associated with the second process described in the *self-regulation oriented conversational model of history-taking* (communicating with the patient) was tested. Students and supervisors were found to include most cues in their (self)-monitoring as predicted by the model and recommended by communication skills teachers, except for the emerging experiential cue 'summative behavior descriptors'. They are comparable to personality adjectives whose usage for feedback-giving is discouraged by communication skills teachers. However, students used them a lot when elaborating on their monitoring, but supervising doctors and non-doctors seemed to be reluctant in using them when monitoring. Rethinking the practice of discouraging usage of personality adjectives for feedback giving might be necessary. Experiential cues such as personality adjectives emerge naturally in consciousness when encountering other human beings. Clearly their noticing should not be the endpoint of monitoring and thus they should not be communicated as 'judgment' or used as a 'self-judgment'. Instead, personality adjectives should serve for students as well as for supervisors as a 'cue' to further explore their behavioral origin.

Conclusion

To conclude, this thesis provides an example of how to merge theoretical considerations concerning learning of complex skills with the practical context of learning history-taking in medical school and in the workplace. It might lay the foundation for totally new types of educational interventions targeting at boosting students' self-regulated learning of history-taking in the workplace.